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# FOR YOUR INFORMATION

## Naled for Mosquito Control

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**EPA evaluates and  
licenses pesticides**

The Environmental Protection Agency (EPA) evaluates and registers (licenses) pesticides to ensure they can be used safely. These pesticides include products used in the mosquito control programs which states and communities have established. To evaluate any pesticide, EPA assesses a wide variety of tests to determine whether a pesticide has the potential to cause adverse effects on humans, wildlife, fish and plants, including endangered species and non-target organisms.

**mosquito officials  
select control  
measures that best  
suit local conditions**

Officials responsible for mosquito control programs make decisions to use pesticides based on an evaluation of the risks to the general public from diseases transmitted by mosquitoes or on an evaluation of the nuisance level that communities can tolerate from a mosquito infestation. Based on surveillance and monitoring, mosquito control officials select specific pesticides and other control measures that best suit local conditions in order to achieve effective control of mosquitoes with the least impact on human health and the environment. It is especially important to conduct effective mosquito prevention programs by eliminating breeding habitats or applying pesticides to control the early life stages of the mosquito. Prevention programs, such as elimination of any standing water that could serve as a breeding site, help reduce the adult mosquito population and the need to apply other pesticides for adult mosquito control. Since no pesticide can be considered 100% safe, pesticide applicators and the general public should always exercise care and follow specified safety precautions during use to reduce risks. This fact sheet provides basic information on naled, an insecticide used in mosquito control programs.

**naled is an  
organophosphate  
(OP)**

**What is Naled?**

Naled is an organophosphate (OP) insecticide that has been registered for use in the United States since 1959. It is used primarily for controlling adult mosquitoes, but naled is also used on food and feed crops, in greenhouses and

**does not pose unreasonable health risks**

in pet flea collars. When applied in accordance with the rate of application and the safety precautions specified on the label, naled can be used to kill mosquitoes without posing unreasonable risks to human health or the environment.

### **How is Naled Used in Mosquito Control?**

**tiny ultra-low volume (ULV) droplets kill mosquitoes on contact**

The mosquito goes through four distinct stages during its life cycle: egg, larva, pupa, and adult (see box). Naled is an *adulticide* used to kill adult mosquitoes. In mosquito control programs conducted by state or local authorities, naled is applied by truck-mounted or aircraft-mounted sprayers. Naled is applied as an ultra-low volume (ULV) spray. ULV sprayers dispense very fine aerosol droplets that stay aloft and kill mosquitoes on contact. ULV applications involve small quantities of pesticide active ingredient in relation to the size of the area treated. For mosquito control, naled is applied at a maximum rate of 0.05 pounds (eight-tenths of an ounce) of active ingredient per acre for aerial application and 0.02 pounds (one-third of an ounce) per acre for ground application, which minimizes exposure and risks to people and the environment.

**used according to the label, naled for mosquito control**

### **Mosquito Life Cycle**

**egg** - hatch when exposed to water;

**larva** - (pl. - larvae) lives in the water; molts several times; most species surface to breathe air;

**pupa** - (pl. - pupae) non-feeding stage just prior to emerging as adult;

**adult** - flies short time after emerging and after its body parts have hardened.

all scenarios considered, exposures were hundreds or even thousands of times below an amount that might pose a health concern. These estimates assumed several spraying events over a period of weeks, and also assumed that a toddler would ingest some soil and grass in addition to skin and inhalation exposure.

**high dose poisonings with any OP can overstimulate the nervous system**

**naled degrades rapidly in the environment but it is toxic to honeybees**

### **Does Naled Pose Risks to Human Health?**

Naled can be used for public health mosquito control programs without posing unreasonable risks to the general population when applied according to the label. EPA has estimated the exposure and risks to both adults and children posed by ULV aerial and ground applications of naled. Because of the very small amount of active ingredient released per acre of ground, the estimates found that for

**EPA is currently reviewing the OPs**

**Centers for Disease Control and Prevention**

However, at high doses, naled like other organophosphates, can overstimulate the nervous system causing nausea, dizziness, or confusion. Severe high-dose poisoning with any organophosphate can cause convulsions, respiratory paralysis and death.

### **Does Naled Pose Risks to Wildlife or the Environment?**

Naled used in mosquito control programs does not pose unreasonable risks to wildlife or the environment. Naled degrades rapidly in the environment and it displays low toxicity to birds and mammals. Acute and chronic risk to fish is not expected, but there is potential for risks to invertebrates from the repeated use of naled. Naled is highly toxic to insects, including beneficial insects such as honeybees. For that reason, EPA has established specific precautions on the label to reduce such risks.

### **What is the Current Regulatory Status of Naled?**

As part of its responsibility to reassess all older pesticides registered before 1984, EPA is currently reviewing naled as part of its reregistration process. The review of naled is scheduled for completion this calendar year. A risk assessment covering all uses of naled is available to the public on the EPA web site. From the pesticide program home page (see address below), select “OPs”, then select “OP Documents and Schedules.”

### **Where Can I get More Information About Naled and Mosquito Control?**

For more information about mosquito control in your area, contact your state or local health department. The federal Centers for Disease Control and Prevention is also a source of information on disease control, and their Internet web site includes a listing of state health departments. To contact the

**Centers for Disease Control and Prevention (CDC):**

**Call: 970-221-6400**

**Fax: 970-221-6476**

**E-mail: [dvbid@cdc.gov](mailto:dvbid@cdc.gov)**

**web site: <http://www.cdc.gov>**

Information on pesticides used in mosquito control can be obtained from the state agency which regulates pesticides, or from the **National Pesticide Telecommunications Network (NPTN)**. The NPTN web site includes links to all state pesticide regulatory agencies.

**national toll-free pesticide hotline**

**mosquito control professionals**

**federal pesticide program office**

## **10 EPA regional offices**

Information on mosquito control programs can also be obtained from the **American Mosquito Control Association (AMCA)** web site at: <http://www.mosquito.org>. This site also lists many county mosquito agencies.

For more information regarding the federal pesticide regulatory programs, contact:

**EPA Office of Pesticide Programs (OPP)**

**Telephone: 703-305-5017**

**Fax: 703-305-5558**

**E-mail: [opp-web-comments@epa.gov](mailto:opp-web-comments@epa.gov)**

**web site: <http://www.epa.gov/pesticides>**

EPA's 10 Regional Offices are also a source of pesticide information, as well as on pesticide program activities in the individual regions.

**EPA Region I - CT, MA, ME, NH, RI, VT**

**888-372-7341**

**[www.epa.gov/region01](http://www.epa.gov/region01)**

**EPA Region II - NJ, NY, PR, VI**

**732-321-4391**

**[www.epa.gov/region02](http://www.epa.gov/region02)**

**EPA Region III - DE, DC, MD, PA, VA, WV**

**800-438-2474**

**[www.epa.gov/region03](http://www.epa.gov/region03)**

**EPA Region IV - AL, FL, GA, KY, MS, NC, SC, TN**

**800-241-1754**

**[www.epa.gov/region4](http://www.epa.gov/region4)**

**EPA Region V - IL, IN, MI, MN, OH, WI**

**800-621-8431 (Region V only) or 312-353-2000**

**[www.epa.gov/region5](http://www.epa.gov/region5)**

**Toll-free hotline:**

**1-800-858-7378 (9:30**

**a.m. to 7:30 p.m. EST)**

**daily except holidays.**

Callers outside normal hours can leave a voice mail message, and NPTN returns these calls the next business day.

**E-mail:**

**[nptn@ace.orst.edu](mailto:nptn@ace.orst.edu)**

**web site:**

**<http://ace.orst.edu/info/>**

**nptn**

**EPA Region VI - AR, LA, NM, OK, TX**  
**800-887-6063** (Region VI only) or **214-665-6444**  
[www.epa.gov/region6](http://www.epa.gov/region6)

**EPA Region VII - IA, KS, MO, NE**  
**800-223-0425** or **913-551-7020**  
[www.epa.gov/region7](http://www.epa.gov/region7)

**EPA Region VIII - CO, MT, ND, SD, UT, WY**  
**800-227-8917** (Region VII only) or **303-551-7020**  
[www.epa.gov/region08](http://www.epa.gov/region08)

**EPA Region IX - AZ, CA, HI, NV, AS, GU**  
**415-744-1500**  
[www.epa.gov/region09](http://www.epa.gov/region09)

**EPA Region X - AK, ID, OR, WA**  
**800-424-4372** (Region X only) or **206-553-1200**  
[www.epa.gov/r10earth](http://www.epa.gov/r10earth)

#### **Other Helpful EPA Publications**

For Your Information - How to Use Insect Repellents Safely (735-F-93-052R)

For Your Information - Mosquitoes: How to Control Them (735-F-98-003)

For Your Information - Larvicides for Mosquito Control (735-F-00-002)

For Your Information - Malathion for Mosquito Control (735-F-00-001)

For Your Information - Synthetic Pyrethroids for Mosquito Control (735-F-00-004)

Questions and Answers - Pesticides and Mosquito Control